

## 24. MODERN MANUFACTURING TECHNOLOGIES AND MEDICINAL SUBSTANCES IN SOFT CAPSULES

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**Introduction.** Most soft gelatin capsules are made of gelatin, which due to its physical properties makes it an ideal excipient for processing in the machine with rotating molds. There are a large number of factors that determine the selection of soft capsules as a drug release system. But the main reason why soft capsules are selected as the most appropriate dosage form is to increase the absorption of the drug compared to other pharmaceutical forms.

**Aim of study.** Highlighting modern technologies in the manufacture of soft capsules and assortment of medicinal substances encapsulated in flexible capsules.

**Methods and materials.** The bibliographic sources were analysed: NCBI platform, PubMed, DrugBunk, Pharmatech, Pharmaceutical-technology and others

**Results.** The hermetically sealed soft gelatin capsules are made in one piece and can be filled with liquids, semi-solids and even solids. Newly discovered molecules of active substances have a generally hydrophobic tendency and are therefore poorly soluble in aqueous systems. In this case, for oral administration, it is more difficult to formulate a water-soluble active substance in the form of a product from which it is completely released and well absorbed into the body. a liquid preparation that contains the active substance in liquid form and can be encapsulated. However, due to economic, technological or patient-dependent difficulties, soft capsules are manufactured in relatively small quantities worldwide. We differentiate several processes for the manufacture of soft gelatin capsules: by immersion (immersion), by pressing (stamping); and by dripping. One of the most widely used methods today is the method of pressing, which involves pressing or compressing a certain amount of wrapping product between two sheets of gelatin in a machine that welds the capsules to the edges and at the same time cuts them (device called capsule). The most commonly used encapsulation products are: volatile oils, esters, alcohols and organic acids, vitamin D and analogues, estradiol and other hormones, carbicol, water-soluble vitamins associated with fat-soluble ones, moisture-sensitive substances such as enzymes, antibiotics, fish, gaiacol and others. For example, in the State Nomenclature of Medicines of the Republic of Moldova we find the following soft gelatin capsules Hydroferol 0,266mg, Gofen 400, Vitamin E, Vamelan, Avodart® and others.

**Conclusion.** The absorption of the drug substance from the soft capsules increases, compared to its release from a solid form (powders or tablets), which is very important from a therapeutic point of view. Patients prefer soft capsules because they are easy to swallow, do not taste unpleasant and have pharmaceutical elegance: modern, new, attractive appearance. Manufacturing methods in industry are automated and in continuous flow, with high efficiency. The assortment of medicinal substances encapsulated in flexible capsules is large and with a wide spectrum of action in the treatment of various diseases.